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Journal of the Society of Arts,
 AND OF
THE INSTITUTIONS IN UNION.

110TH SESSION.]

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Announcements by the Council.

EXAMINATIONS, 1865.

The Programme of Examinations for 1865 is now ready, and may be had gratis on application to the Secretary. A copy has been sent to each Institution and Local Board.

Proceedings of the Society.

EXAMINATION PAPERS, 1864.

The following are the Examination Papers set in the various subjects at the Society's Final Examinations, held in April last :—

(Continued from page 646.)

MINING AND METALLURGY.

THREE HOURS ALLOWED.

1. Describe the ordinary process of roasting lead ores in the reverberatory furnace, and the chemical changes which take place during the operation.
2. In what localities is tin ore principally found, and by what apparatus and in what way is it crushed and prepared for the market?
3. What is the principal ore of mercury, and how is quicksilver obtained therefrom?
4. How would you ascertain, commercially, the amount of copper present in an ordinary sample of copper pyrites?
5. Give the composition of iron pyrites, and state for what purposes it is chiefly employed in the arts.
6. From what source is the white arsenic of commerce (arsenious acid) principally derived?
7. Describe the ordinary round buddle for dressing ores.
8. How would you estimate, by assay, the amount of silver contained in an ore of copper?
9. Give, approximately, the composition of Welsh steam coal.
10. Describe the processes usually employed in this country for the conversion of wrought iron into steel.
11. If 900 cubic feet of water per minute be expended on an overshot wheel, 20 feet in diameter, with a 2-feet head, what will be its horse-power?
12. Describe the process of boring as employed in searching for coal and ironstone, &c.

POLITICAL AND SOCIAL ECONOMY.

THREE HOURS ALLOWED.

First Series to be answered, if possible, throughout.

1. Give a sketch of our Asiatic dependencies (exclusive

of Australasia), showing the different products of each, and the principal trade of each with Great Britain.

2. What was the original character of the East India Company? How was that modified by successive acts of Parliament, and what is the Company now?

3. What are the proper uses of Bills of Exchange, and how do you distinguish *bond fide* commercial bills from those which are drawn for accommodation?

4. What are now the limits of the issues of the Bank of England, and what are the functions of the issue and banking departments respectively?

5. Show, by instances, the progress in the improvement of roads in England previous to the introduction of railroads? What are the different sorts of highways, and out of what funds are they repaired?

6. What is a drawback, and what a bounty upon exportation, and upon what different principles are they founded?

Second Series. Optional.

1. Under what circumstances, and for what purposes, are monopolies, either trading or professional, useful and right?

2. What questions are now at issue between those who propose and those who resist the equalisation of the Sugar duties?

3. To what special taxation, either in kind or degree, is the ownership and occupation of land now subject, and from what taxation is either of them either wholly or partially exempt?

4. How far is it true that all taxes on the produce or occupation of land are payable out of the rent?

DOMESTIC ECONOMY.

THREE HOURS ALLOWED.

1. Explain what you understand by Domestic Economy, and enumerate under different heads what, in your opinion, it embraces.

2. In domestic expenses what rules would you lay down:

- 1st. As to rent.
- 2nd. Food and clothing.
- 3rd. Casual expenses.

3. What are the advantages, in purchasing the ordinary necessities of life, in paying ready money, and what are the disadvantages in not doing so?

4. What are the relative advantages or disadvantages to the labouring classes, in the purchase of necessary things, to those living in large towns, and in rural parishes widely distant from them:

- 1st. As to house rent.
- 2nd. As to food and clothing.
- 3rd. As to health.

5. What is the most economical mode of cooking meat? and why? How should a joint of meat be boiled in order to preserve the juices?

6. Compare the use of wheat-flour and oatmeal in different parts of Great Britain. How is this to be accounted for? Which of the two is the more nourishing? and why?

7. Are there any objections to using salted meat as an article of food?

8. Describe any method by which fuel may be economised. What principles should guide us in the choice of our clothing?

9. What kinds of food keep up animal warmth, supply the waste of muscle, and produce bone?

10. Explain how it is that hot water often breaks crockery?

11. In effecting an insurance on one's life, or in providing against sickness by entering a benefit club, what precautions should be taken, and what dangers should be guarded against?

12. What value do you attach to reading, writing, and arithmetic, as qualifications for good household management?

13. What are the leading principles of good management in the mother of a family in the labouring classes?

14. How are the health, happiness, and morality of the working man and his family affected by the circumstance of his having a commodious and fitting cottage to live in?

GEOGRAPHY.

THREE HOURS ALLOWED.

1. By what conditions are the eastern and western sides of Britain distinguished from one another—as to outline, character of surface, mineral produce, and climate?

2. In what counties are Kidderminster, Halifax, Stockport, Birkenhead, Pontypool, Stroud, Bridport, Dundee, Wick, Glasgow, Paisley, and Belfast? Name any distinguishing branches of industry connected with those places, respectively.

3. Describe briefly, as to natural features, political divisions, and chief towns, one of the following countries:—France, Italy, Prussia.

4. Draw up a list of the British colonies and dependencies throughout the world, under the respective headings of Europe, Asia, &c. Name the capital of each.

5. Write a brief account of Canada, as to its physical features, productions, industrial resources, and chief towns.

6. Give, similarly, a brief account of British Columbia and Vancouver Island. Say by what routes they are accessible from Britain.

7. Give a brief account of Australia, as a whole—with reference to situation, natural features, climate, and indigenous productions.

8. Write a brief description of New South Wales, stating particularly the respective characteristics of its maritime and inland divisions, the names and direction of its principal rivers, its mineral produce, and the leading conditions of its climate. Also, say what constitutes its principal article of export.

9. In which of the Australian colonies are, respectively, the towns of Bathurst, Brisbane, Sydney, Castlemaine, Geelong, Perth, Goulburn, Launceston, Hobart Town, and Adelaide?

10. Draw an outline map either of New South Wales or Victoria, marking on it the direction of the high grounds, the rivers, and the places of the principal towns.

11. What conditions, besides distance from the equator, tend to regulate climate, in so far, especially, as temperature is concerned? Illustrate this by some examples of contrasted climates, in the case of localities lying within the same (or nearly the same) parallels.

12. State some of the more striking points of difference between the flora and fauna of the Old and New Worlds. Also, some instances of the respective changes made by

the agency of man between the one and the other (*i.e.*, instances of plants or animals transferred from the Old to the New World, or *vice versa*.)

(To be continued.)

Proceedings of Institutions.

EBBW VALE LITERARY AND SCIENTIFIC INSTITUTION.

—The report for the year 1863-1864, read at the annual meeting of members, July 12th, 1864, under the chairmanship of the Rev. William Hughes, M.A., Vice-President, states that there has been a considerable increase in the number of subscribers, and the Institution is, in this respect, in a more flourishing condition; but it is equally evident that the number of members who avail themselves of its advantages is far from commensurate with the number of inhabitants in these works and the immediate neighbourhood. The essay prize scheme, established some three years since, and to which many persons not only in the place but the vicinity handsomely contributed, has failed to excite the interest or exercise the intellect of the members this year. Although first and second prizes of £3 and £1 10s. were offered for successful essays on each of two subjects, both in English and Welsh, and amounting in the aggregate to £18, only one composition in each language has been sent in. The English adjudicator, the Rev. Evan Lewis, M.A., Vicar of Aberdare, reports the essay on "Self-dependence," marked "Truth," and which has been ascertained to be the production of Mr. Jabez Wall, to be worthy a prize. It is with regret the Committee announce that there has not been any attempt at the formation of classes during the past year. The museum, which has attracted many visitors, has had but few acquisitions, but, at the same time, has not drawn upon the funds of the society. The only novel features which have characterised this year's transactions, are the introduction of penny readings, and the substitution of a pic-nic for the annual soiree. The former were tried, as an experiment, on the anniversary of the Shakespeare Tercentenary, when several interesting selections from good authors were read, and the proceedings were enlivened by the performance of glees and duets from his works. This proved most successful, and the Committee would strongly recommend that a series of these entertainments should form part of the programme for the ensuing year. The pic-nic also was a very satisfactory affair, many hundreds enjoying the journey to Caerphilly Castle—and the scene, the refreshments, and the amusements there provided. It is proposed this year to repeat the entertainment, varying only the scene, and arrangements are in progress for a trip to Raglan Castle at an early opportunity. The number of books in the library (as per catalogue) is 1801. They are in good repair with the exception of about twenty, which require re-binding. The attention of the Committee has long been directed to a revision of the books, and the formation of a new and comprehensive catalogue; and they especially call the attention of their successors in office to this much desired object. During the past year 168 volumes have been added to the shelves; of these two volumes have been presented; 136 have been purchased by the society; and the remaining 41 consist of the best of the periodicals, which have been rebound and added to the general list. In addition the Committee have purchased for the reading-room maps of the seats of war in Denmark and America, and beg to throw out a suggestion that the walls of the room might be appropriately and usefully hung with some good and large maps out of the gratifying balance in favour of the Institution. A good clock also would be a desirable addition to the reading-room. The Committee beg gratefully to acknowledge their obligations to the Ebbw Vale Company for their continued munificence.

GAOL DIETARY—THE OPERATIONS OF THE RECENT COMMITTEES.

By EDWARD SMITH, M.D., LL.B., F.R.S., Assistant-Physician to the Hospital for Consumption, Brompton.

The subject of the dietary in gaols has attracted so much attention, that three public (or *quasi*-public) bodies have, within the last fifteen months, been appointed by the State to report upon it and other subjects involved in gaol discipline, viz., a Royal Commission, having at its head Earl Grey; a Committee of the House of Lords, with the Earl of Carnarvon as chairman; and a Committee of Medical Officers to Convict Prisons, appointed by Sir George Grey, with Dr. Guy as chairman.

As I propose to limit my remarks to the department with which I am most familiar, viz., to county and borough prisons, I shall only state in reference to the Royal Commission that it received conflicting evidence as to excess in the dietary of convicts employed on public works, and reported* that, "under these circumstances we are not prepared to recommend positively that the rations of these prisons should be diminished, but we think it desirable that experiments should be tried in order to ascertain whether any reduction can safely be made." The solid food in the diet at Portland contained weekly 171 ounces of bread, 39 ounces of cooked meat (equal to upwards of 50 ounces of raw meat), 112 ounces of potatoes, and 30 ounces of suet pudding, which, exclusive of liquid food, yielded about 40,000 grains of carbon and 1,700 grains of nitrogen.

THE FORMER DIETARY.

Before showing what has resulted from the labours of the other inquiring bodies, I will explain in a few words the state of the dietary question in county and borough gaols at the time when the committees entered upon their duties.

Under the existing law there is no one authority which is supreme on dietary questions, but the magistrates in Quarter Sessions of each county frame such a scheme of dietary as they think proper for their own gaols, and send it for approval to the Home Secretary, who may disapprove of it, but who has scarcely ever withheld his concurrence. The Government prepared a scheme of dietary in 1843, which it recommended to the magistrates, but it has never enforced, and has never had the power to enforce, its adoption. Hence in practice the magistrates, and particularly the Visiting Justices of Gaols are the great authorities on the dietary of prisoners, but as they can only act each for his own gaol the authorities are numerous, and, as I shall now show, widely discordant. A return of "Dietaries for Convicts, &c.," issued by the Government in 1857, and the report of the Committee appointed by George Grey, show that one-half of the gaols throughout the country are non-conforming in reference to the Government scheme of dietary, and these differ from the others in the particulars of numbers of scales of dietary, the relation of labour and duration of imprisonment to these scales, and the kind and quantity of food in each scale. This diversity of system is so great that it has long been notorious, and is referred to by the witnesses who gave evidence before the Lords' Committee, and in the reports of the Lords' and of Sir G. Grey's Committee, and was pointed out in detail by me in a paper read before a special meeting of the Social Science Association in 1859, and printed in the *Philanthropist* of that year. It is not necessary that I should here analyse these non-conforming dietaries, and I will, therefore, only point out the scheme adopted by the Government.

The basis of the scheme is, that the food supplied shall

vary with duration of imprisonment and with labour, in such a manner that it shall be greater as the sentence is prolonged to four months, and that a prisoner sentenced to hard labour for a shorter sentence shall have the diet of one sentenced for a longer period without hard labour. Thus both hard labour and duration of imprisonment were believed to demand increased food, and were in that respect interchangeable. The theory in reference to duration of imprisonment was, that a man in confinement required more food than in freedom, and the demand increased in proportion as the duration of confinement increased, and it was based upon the fact, that the prisoners fell off in health and strength after submission to the influence of the lower dietaries, whilst they remained in *statu quo*, or thereabouts, when fed upon the higher dietaries. I only stay here to add the remark that this supposed influence of confinement was not proved in any way, as by placing the prisoners under short sentences upon the fair dietaries of free labourers, but the prisoners were empirically placed upon low dietaries, which Sir George Grey's Committee state "introduce a strong penal element into classes one and two, for we have no knowledge of any class of persons who voluntarily limit themselves to bread and gruel for a week, much less for three weeks at a time;" and hence as they had supplied less food than a man wants in freedom, it is more reasonable to say that the higher dietaries were necessary, because the low dietaries were insufficient to maintain health and strength. The evil of the low dietaries was limited by the short duration of their use, and the low diet was supposed, but not proved, to be such that the body could bear it without long-continued or permanent loss of health and strength. It was further limited by being restricted to the short sentences only, for the prisoners condemned to long imprisonment began to be fed at once upon the better dietary, but this limitation was removed in a few gaols by the Visiting Justices, and a new penal element was introduced, which is now designated "progressive dietaries," under which every prisoner begins upon the lowest scale of diet, and obtains better food as the duration of imprisonment increases. Here also it must be noted that it had not been proved that the dietary of the lower scales was sufficient to maintain health and strength, and if by comparison with the dietary of free labourers they may be affirmed to be insufficient, those prisoners who enter the gaol in fair health and strength are first lowered in both, and then, so far as the scheme permits, are restored to their former state.

Thus a scheme was formed on certain suppositions, but without any proof on the following fundamental questions, viz. :—

- 1.—The effect of confinement absolutely over the necessity for and due digestion and assimilation of food.
- 2.—The effect of confinement in its progressive duration, assuming the sufficiency of the food in the dietaries for short duration.
- 3.—The sufficiency of the lower classes of diets as inferred from the food of free labourers, and as proved by the effects upon the body.
- 4.—The necessity for luxurious food in the highest classes, as estimated by the same standards.
- 5.—The effect of various kinds of labour included under the term "hard labour," with a view to exactly adapt the dietary to the requirements of each.
- 6.—The assumption that all kinds of labour demand the same supply of food.

Yet the scheme was laid down with as much apparent precision as if the bases had been proved, and a plan of five classes was devised which was to meet the Home Secretary's precise requirements, viz. : "that the food should be sufficient, and not more than sufficient, to maintain health and strength," and "that the dietary should on no account be made an instrument of punishment." But this

* Report of the Commissioners appointed to inquire into the operation of the Acts (16 and 17 Vict., c. 99, and 20 and 21 Vict., c. 3) relating to Transportation and Penal Servitude, 1863.

occurred twenty years ago, when the knowledge of the nature and effect of foods was very small, and when methods of research were scarcely discovered, and were restricted in their use to very few persons.

Such, then, was the state of the questions at the period when the committees undertook to make inquiries respecting them. A scheme was provided to meet different conditions, not one of which had been duly estimated with scientific precision, and from which, therefore, there were as many dissentients as consentients, and an actual assemblage of dietaries differing in the quantity, quality, and kind of food supplied, and in the conditions in which they were to be enforced.

I now proceed to describe the operations and the conclusions of the two Committees who undertook to investigate the matter.

THE LORDS' COMMITTEE.*

Lord Carnarvon's Committee, when examining the various witnesses on the discipline in gaols, ascertained the views of gaol officials, and particularly of Sir Joshua Jebb, in reference to dietary, some of whom, as Mr. Merry, Chairman of the Visiting Justices at Reading, urged that the higher classes of dietaries were better than the dietaries of the labouring classes in freedom, and better than workhouse dietaries, and therefore wished them to be reduced: they also admitted and approved the penal character of the first-class dietaries, and also approved of progressive dietaries. Others, as Sir Joshua Jebb, expressed the opinion that prisoners need much food in prison; and others still, as Mr. Perry, Inspector of Prisons, thought that the present system worked well, and that progressive dietaries would be injurious to the prisoners.

Two scientific witnesses, having no official connection with county prisons, viz., Dr. Guy and myself, were also examined, and as my examination took place first, the questions and answers were, on numerous occasions, read over to Dr. Guy, and his opinions solicited. The Committee were especially desirous to ascertain if dietaries could be framed from which the meat element could be excluded, and they asked me if I could frame new dietaries for county gaols. I affirmed that the two lowest diets in the government scheme were too low to maintain the health and strength of the prisoners—that the lowest would be a starvation dietary to one long fed upon it, and that, on the other hand, it was highly probable that more meat was allowed in the fifth class than was necessary. I regarded the third and fourth classes as those upon which the health and strength could probably be maintained. I declined to frame new dietaries, on the ground that much new information was needed before any dietary could be fixed upon a final basis, and without this the scheme would be made up of guesses which would not carry conviction of its worth to the minds of others, and would thus leave the question as unsettled as before. These questions were—the influence of confinement over the digestion and assimilation of food, and over other functions of the body; the necessity for the expensive and luxurious foods, meat and fat, or the probability of supplanting them wholly or partially by milk and starchy foods, and the precise influence of the tread-wheel and other and most diverse kinds of labour which constitute prison discipline. These having been satisfactorily answered, there would not be any difficulty in framing dietaries so as to settle that question. Dr. Guy, on hearing that answer read, concurred generally, but thought that it was not necessary (although desirable) to determine the points with so much precision, and was of opinion that it could be got at roughly. He wished to supply a uniform quantity of bread and a certain quantity of potato daily, and was of opinion that the meat element might be omitted

from the dietary, and in proof furnished the Committee with a series of dietaries so constructed, but which, as he subsequently said, would require to be tested by experience. Hence both concurred in the necessity for new experimental researches, either roughly or minutely made, in order to frame new dietaries; and in reference to the mode by which it should be effected, Dr. Guy was of opinion that a prison official, with one or two coadjutors, would be the best mode, since a committee "is never of more value than the best man in it."

When the Committee sought to agree upon their report, there was some difference of opinion in framing the clauses on dietary, but at length they agreed that the dietary in county and borough prisons was very unsatisfactory from total absence of uniformity, and from the irreconcilable inequalities in the nature and the amount of food given; and that the dietary framed by the Secretary of State was not sufficiently based upon scientific and medical principles to be taken as a satisfactory guide. Classes 1, 2, and 3, were thought defective as regards quality of the diet, and classes 4 and 5 contain food beyond the reasonable requirements of health; and on the evidence a diet of vegetable and farinaceous food, with the assistance of milk and some slight addition of meat, might be used by the prisoners without risk to health. Such were their views, but, decided as they are, they were unwilling to act upon them, but add "that they are not prepared on their own responsibility to recommend any one table of diet to be made uniform for all prisoners, but draw special attention to the medical evidence which Dr. Smith and Dr. Guy have given, and to the four principal scales of diet subjoined." They then go on to say, "but it appears that there are still medical and scientific questions as to the effect produced by confinement upon prisoners, and as to the necessity for certain ingredients in the food, which require further investigation. Under these circumstances the Committee recommend that a commission be issued to inquire into these questions, with authority to determine by experiment the points referred to them."

Such, then, is the position in which the question was left by this Committee of the House of Lords. They found the present system unsatisfactory, the government scheme a bad guide, certain classes of diet too low, and others too high, certain questions to be settled before the subject would be ripe for final decision, the propriety of taking such steps as would finally settle the question, and this on the full understanding that such inquiries would delay the decision for one or two years. Hence they add their opinion to that of the Royal Commission that experiments should be made, and that in the absence of them they were unprepared to take any action.

SIR GEORGE GREY'S COMMITTEE.*

The report of the Lords' Committee was made in 1863, and in the following months many persons were interested to ascertain the course which the Home Secretary would pursue. As the number of chemists and physiologists who could or would undertake such an inquiry was small, it was soon ascertained that no Commission had been issued, and that no scientific inquiries were in progress. Silence and mystery seemed to hang over the subject, and it was only in an indirect manner—that is, in answer to an inquiry by a Visiting Justice, that it became known that a Committee had been appointed; after which the issue of a circular to Visiting Justices made the fact widely known; but the names of this Committee, with the exception of that of Dr. Guy, were not revealed, even

* Report from the Select Committee of the House of Lords, on the present state of Discipline in Gaols and Houses of Correction, 1863, H. L., 37.

* "Prison Discipline, &c." "Copies of Correspondence between the Secretary of State for the Home Department and the Inspectors of Prisons, relating to the Report of a Select Committee of the House of Lords on Prison Discipline; and of the Report of a Committee appointed by the Secretary of State to inquire into the dietaries of County and Borough Prisons."—H. C., 20 May, 1864.—313.

in the answers to the questions asked in the House of Commons. The sole interest in this part of the question was the inference to be drawn as to the plan which would be pursued in carrying out the wishes of the Lords' Committee, for the known opinions of the gentlemen appointed, as well as the special departments of knowledge with which they were and were not familiar, must necessarily influence their method of handling the subject.

When the appointment of the Committee became known, as also the fact was ascertained that no chemist physiologist of high-standing was engaged by the Committee to assist in the inquiry, it was inferred that the course recommended by the Lords' Committee would not be pursued, and that the subject would be left to the guide of so-called experience and statistical analysis.

I now turn to the report of this Committee, and purpose to show what the Committee state they have not done, and then what they have done.

From this report we find that the Home Secretary referred to the recommendation of the Lords' Committee to the Inspectors of Prisons—Messrs. Perry and Voules—and they reported in a sense directly opposed to the view of the Lords' Committee, and were of opinion "that the required modifications might be better ascertained by practical observation and experience than by a Commission with authority to determine these points upon scientific evidence alone." (I remark, *en passant*, that the word "alone" raises a false issue, for the Committee did not state that all questions of dietary were to be settled by experimental inquiry.) Here arose a conflict between two methods of inquiry—one trusting to the fallacious mode of common observation practised by a number of persons varying in powers of observation and in special training; the other seeking to apply the exact methods of scientific research by men who, amongst their compeers had proved themselves capable of making such researches not unsuccessfully. That those who were not familiar with such scientific researches should prefer the readier, and, to them, the only available method of common observation or so-called experience, must necessarily follow.

With two authorities, both agreeing in the necessity for some change in the present system of diet, but differing *toto celo* as to the mode whereby the change should be effected—one content with imperfect knowledge and inexact results, the other demanding such additional knowledge as would place the results upon a sound and final basis—a middle course was adopted, and a committee of medical gentlemen, not known in chemico-physical research and in county practice, was appointed, who, at the same time, were informed that they had to conduct experimental researches. In reply to a question, Sir G. Grey writes—"It is one of those medical and scientific questions which, in the words of the report of the Lords' Committee, require further investigation, and which can only be properly determined by experiment. One object of the inquiry which you and the medical gentlemen associated with you have been requested to undertake is the solution of this question."

Having appointed this Committee, the Home Secretary instructed them that the prison dietaries which they were to recommend must be sufficient and not more than sufficient to maintain the health and strength of the prisoners; that they must not be in more favourable contrast to the ordinary food of free labourers or the inmates of a workhouse than sanitary conditions render necessary; that they must bear in mind the different habits of life and quality of food of free labourers in different parts of the country, and that they must prove by experiment as to whether the health of prisoners under long sentences will bear their passing through the lower dietary of the shorter sentences—a progressive dietary—or whether they must be at once placed upon the higher dietary of their own class.

The Committee in their report recapitulate the duties assigned to them, and state that they are required to re-

commend dietaries for different durations of imprisonment; to say whether the dietary for the longer sentences shall be progressive or not; to avoid any approach to luxury; and to take care that they shall not be excessive, and to arrange that they shall be sufficient, and not more than sufficient, to maintain the health and strength of the prisoners.

Such are the duties assigned to and accepted by this Committee, and they imply exact knowledge upon the following subjects, viz.:—The effect of confinement absolutely and in its duration; the influence of labour in the various degrees of prison punishments; the amount and kind of food which is exactly adapted to maintain health and strength under the different conditions of sex, age, locality, and habits of life, of duration of imprisonment and diverse kinds of labour, and the necessity for the so-called luxurious foods. Let us now inquire to what extent the inquiries instituted by this Committee have set these questions at rest.

WHAT THE COMMITTEE HAVE LEFT UNDONE.

The effect of confinement is generally stated to be such that more food is required in prison than in freedom, and with long sentences than with short ones, although in the absence of the usual amount of exertion the contrary might seem more probable. Sir Joshua Jebb, in his evidence before the Lords' Committee, stated such to be his opinion, and in my evidence I explained it by showing that the power of assimilating food is lessened in confinement, so that a larger proportion of food passes off unused by the bowels, but the degree in which this occurs is unknown, and to determine it special scientific inquiries, such as I had made for the British Association, were necessary. Upon this, apparently, the Lords cited these as fit subjects for scientific investigation. Sir George Grey's Committee, however, in their report, when quoting this recommendation of the Lords' Committee and the statement of Sir George Grey, that they are requested to undertake the solution of that question, remark that the problem is "not capable of solution by scientific inquiry, but only by experience." They write:—"As we should be sorry to disappoint any apparently reasonable expectations which may have been formed of the result of our labours, we desire at once to express an opinion that there is no experiment, or series of experiments, which we could devise, or which we could hope to obtain facilities for making, which would show the true effect produced by confinement upon prisoners." As to the facilities necessary for such inquiries, the Committee were acting under the competent authority of the Home Secretary, and might surely have obtained them; and if they were unaware of the mode by which such experiments were conducted, as they say they were, the fact that others had devised successful methods, as well as the conclusion at which the Lords' Committee had arrived, and the express duty of experimental inquiry delegated to them by the Home Secretary, would lead to the inference that they should have ascertained from others more familiar with such investigations the proper course to pursue. But after having thus expressly stated that "there are no experiments, or series of experiments," whereby this question could be determined, in the next paragraph they go on to state a mode by which, in their opinion, it could be ascertained, viz., by comparing two groups of properly chosen men in confinement and in freedom; and they add the remark that "such an experiment must be one of considerable duration." Such a mode of inquiry was open to them, and no doubt much time would have been occupied in it; but it was so stated in the evidence before the Lords' Committee, and on that understanding that Committee advised the appointment of a Commission. If, therefore, notwithstanding their statement that no experiments could be devised, they did devise them, it was surely their duty to have made them. But to make the climax still less satisfactory, after stating that they could not devise the experiments, and yet did devise them, in

the next paragraph they excuse themselves from prosecuting them by a second contradiction as follows:—"As the opportunities for making such an experiment do not exist, and cannot be created, it is obviously not in this direction that we must look for instruction." Such seems to be obvious so far as relates to their own acts, but it does not follow from their own arguments, neither does it prove that others could not have found "instruction" from such inquiries. They thus at once avoid a duty delegated to them by Sir George Grey, affirmed to be necessary by the Lords' Committee, and proved to be practicable by a witness who had performed it; and what do they give us in place of it? They say "we must be content, therefore, to adopt and act upon certain prevailing opinions respecting the influence of health and the counteracting effects of certain kinds of food and certain dietaries,"—that is, must accept as true that which they were specially appointed to investigate, and which had not hitherto been based upon scientific proof, but upon opinions only. Surely no Committee was required in order that this course might be pursued.

The subject is a fundamental one, for the whole fabric of the scheme of dietary must be based upon it, and yet the Committee have left it precisely as they found it, and based their recommendations upon an "improved series of facts."

But did they not adopt some other method of proof besides that of "certain prevailing opinions?" They quote a statement made by the Inspectors of Prisons, to the effect, that animal food should not be withheld from prisoners of the agricultural class, even in those counties where meat forms a very rare ingredient in their ordinary diet, because the confinement of a person lessens his powers of digestion and assimilation of vegetable food; and then add, "though not admitting of being put to the test of experiment, we adopt and are prepared to act upon it, out of respect to the authority from which it emanates." Thus our highest scientific authorities become the Inspectors of Prisons, and they make a statement of a purely scientific character, which could only be proved by scientific inquiries, and not by common observation or experience, and yet the Committee affirm that no such proof can be obtained; but because the Inspectors state a fact, they are "prepared to act upon it out of respect to the authority." Could anything be more illogical—to deny the proof, and yet accept the authority, to be appointed to prove facts by experimental researches, and to be content to record and act upon an individual opinion? Hence upon this important and fundamental question the State is called upon to act upon grounds not capable of proof, but upon "prevailing opinions," and upon approved statements of Inspectors of Prisons.

So much in reference to the question of the effect of confinement absolutely—what of the further influence of duration of confinement, with a view to determine whether the quantity and quality of food must be increased in order to maintain health, as the duration of the confinement increases? If the effect of confinement cannot be proved, how can proof be obtained of the effect of duration of confinement? Upon this rests the proof of the necessity for different scales of diet with different durations of imprisonment, for the condition imposed by Sir J. Graham must be borne in mind, that for any, the shortest duration, "the quantity of food was to be sufficient, though not more than sufficient, to maintain health and strength."

If a dietary for three days' imprisonment effect this object, it will be equally fitted for three months' imprisonment, unless it be shown that duration of imprisonment exerts such an influence that more food is required to maintain health and strength as the duration increases. If the latter be true we shall require different scales of dietary, increasing in nutriment up to the point when this effect of duration of imprisonment has obtained its maximum. Hence, before any step can be taken towards the construction of dietaries we must know how much

more food is required by duration of imprisonment—its rate of increase with duration, and where the extreme limit occurs.

It will be readily understood that as the Committee could not devise any experiments to prove the effect of confinement absolutely, they could not do so to prove the effect of duration of confinement, and yet any scientific man who could ascertain the former, could prove the latter also; and they cut the knot by simply following the example of the framers of the existing scheme of government dietaries for county gaols. They criticise severely the grounds upon which the framers of that scheme proceeded, and yet they accept this part of their results without new inquiry, and whilst knowing that there are gaols in which the dietary is the same for all prisoners, and that fully one-half of all the gaols in the kingdom adopt schemes in which the duration of imprisonment differs from that of the government scheme. They say, "But as the dietaries thus recommended by Sir J. Graham may be presumed to have represented his real opinions, at least, as faithfully as the comments which accompanied them, we shall to a certain extent take them as our guide. We shall assume that criminals sentenced to short periods of imprisonment are not only to have less food than those sentenced to longer periods, but that the food ought to consist of fewer elements, and those not of the most attractive character."

Hence, again, this Committee have entirely begged the question, and have assumed that which they undertook to investigate.

The question as to the propriety of placing each prisoner upon the diet of the lowest class, and advancing him to better food as the duration of his imprisonment progresses through the different classes, must entirely rest upon two facts; first, the sufficiency of the lowest dietary to maintain health and strength, and the necessity for a better dietary with duration of imprisonment. If the former be not proved, you may place each man upon an insufficient dietary for a time and lower his health to a state from which he may or may not be raised by the better dietaries when he reaches them. If the latter be not proved, then the whole progression may be unnecessary and one class of dietary may suffice. The latter was neither proved nor investigated by the Committee, and for the former—how was so important a matter settled? Of course by experimental proof, or if not, to take the plan pursued by this Committee, by sufficient experience and authority. They neither adduce experiment nor authority, but say, "As it is obvious that it is quite possible to frame two distinct dietaries—the one on the supposition that the prisoner is placed at once on the diet of his class, the other, &c.," and "that it is quite practicable to do this with due regard to the maintenance of the prisoner's health, this Committee feel that the grave responsibility rests upon them of deciding a question, which, ceasing to be one of health, becomes one of discipline." They affirm that it is obvious that the lowest class dietary is sufficient for the maintenance of health and strength. How is it obvious? It is not a self-evident proposition, and they adduce no proof, neither that of experiment nor authority, and yet they say "it is obvious."

They make simply an affirmation, and again beg the question, and upon such reasoning take upon themselves to do that which the law only should do, viz., to decide upon a matter not of health, but of discipline. They say, "We accept the responsibility, and at once embrace the alternative which commends itself to our judgment as most consistent with common sense and common justice, viz.: that all prisoners, without exception, shall graduate through the dietaries proper to all the sentences shorter than their own until they reach the dietary proper to their own class." Thus they assume the position of legislators and make an important law on their own affirmation, without experiment, without even quoting authority, and in defiance of the direction of the

Home Secretary who appointed them, and who informed them that "it is one of those medical and scientific questions which, in the words of the report of the Lords' Committee, require further investigation, and which can only be properly determined by experiment. One object of the inquiry which you and the medical gentlemen associated with you have been requested to undertake is the solution of this question."

They do not quote any authority; yet it may be added that the Lords' Committee, acting in their capacity of legislators, recommended this course. The Inspectors of Prisons—the gentlemen to whose authority upon scientific matters they implicitly bow—objected to this course, as indeed did the late head of the department to which all the Committee belong—Sir Joshua Jebb—in their answers to the Lords' Committee; but with such a weight of authority against them, they say "we accept the responsibility," and decree otherwise.

Hence upon the questions of the influence of confinement absolutely, and as affected by duration, their instructions are set aside, no experimental researches have been undertaken, no scientific knowledge applied; but action is taken upon their own unsupported affirmations—upon authority which they accept in one matter and reject in another equally without examination—upon "prevailing opinions," and upon the plans of those who had preceded them.

Let us inquire as to the mode of determining the question of sufficiency, and not more than sufficiency, of the food supplied under the various influences of sex, age, habits of life, locality, and labour.

As to food. It was stated in evidence before the Lords' Committee that experiments were required to prove what amount of food was necessary in confinement, and whether certain kinds of food, which are expensive and luxurious, are necessary to the system, and upon this evidence the Lords advised that a Commission should be issued to make experiments. Upon this Sir George Grey's Committee remark that the medical and scientific questions concerning which the Lords recommended that further investigation should be made, are not distinctly stated. They think that the proper ingredients in dietaries, and the proportion in which they should be blended, are well known, and the only undecided question is the quantity of these ingredients which men require under different circumstances. Hence they find one subject, and that not an unimportant one, on which they had need of further inquiry, but they add immediately, "It is not known, nor can we ascertain by any series of observations which we can hope to be placed in a position to make, whether a prisoner subject to the depressing effect of solitary confinement requires more or less food than the same prisoner working in association in the open air." But that knowledge lies at the very root of the question of sufficiency or insufficiency, and must be obtained before a dietary can be framed which shall exactly keep the prisoner in health and strength; and yet, they make no experimental inquiries, nor obtain new information of any kind. They again refer to "prevailing opinions," which they say indicate that a liberal diet should be given in confinement.

What, then, do they look to as their guide? If the proper quantity of food to be given to persons in confinement is unknown, and they do not take any steps to add to existing knowledge, how do they satisfy themselves in discharging the important duty assigned to them of exactly adopting the food to the requirements of the prisoners? They ask the opinion of the Visiting Justices of prisons, and accept that as their only guide.

As to age. They do not make any inquiries or any statement beyond that of recommending the dietary of women for boys under 14. In reference to sex they affirm that a woman weighs one-sixth less than a man and should have one-fourth less food than a man, but they do not make any new inquiries nor give any proof upon which to base such a statement, and in their tables

a greater difference is made, viz.: a reduction of one-third in the quantity of meat allowed to women.

The habits of life and the kind of food of the prisoners when in freedom were thought of sufficient importance by the Secretary of State to induce him to give the Committee special directions to consider them, both in reference to the quantity and quality of the food in prison dietary; but what say the Committee on this subject? They write, "It is extremely difficult to ascertain what the ordinary food of free labourers is," and "even if the inquiry were limited to the worst fed, viz., agricultural labourers, the true facts would not be readily obtained, and it would still be more difficult to obtain such an acquaintance with the different habits of life and quality of food of free labourers, in different parts of the country, as would admit of practical application to the dietary in hand." Moreover the first would not be a guide if the food were badly chosen, badly cooked, and not sufficient in quantity, as they believe to be common in large families and poor neighbourhoods. The standard requirement is not that which any class of labourers obtain, but that of the actual necessities of the prisoner.

Hence they do not investigate this subject, or, as Sir George Grey wrote, "bear in mind the varying circumstances, &c., because it is difficult; and yet at the very time to which this refers, the inquiry had been made by the Privy Council in every county in England, and the required information could have been readily obtained. But although this was too difficult for them to undertake, they excuse themselves by laying down an important and trustworthy principle for their guidance—that of the necessities of the prisoners. Did they inquire into this fact, and thus settle the question? Not at all. No experimental inquiries as to the food which was required by a prisoner in any locality, much less in various localities, were made, and the matter was left precisely as they found it.

But the most remarkable occurrence was the course which they pursued in reference to labour. They leave it to the authorities, as at present, to affix their own meaning to the term "hard labour," (which hitherto has varied from receiving the instructions of the chaplain to continuous labour on the treadmill, or at the crank), and make certain additions to the dietary without labour. They do not make any experimental inquiries as to the effect of the various kinds of hard labour upon the body, with a view to estimate accurately the food which is required to meet the waste thus caused, and thus to afford a guide to the magistracy in the selection of labour, but take as their minimum a labour which visibly increases the breathing and opens the pores. How, then, is it possible for them to apportion food to a condition of the body which had not been ascertained? They simply avoid this part of their duty also, and arbitrarily make certain additions to the dietary on the ground of this hard labour. But if the food which they advise should be insufficient, how is their recommendation to be rendered in accordance with the directions which they received? This they meet in a most amusing manner, by placing their own responsibility on others—by recommending that the labour be reduced till the prisoner on the dietary prescribed by them is able to bear it. They were directed to ascertain what food is required to sustain the health of the prisoner with labour, and they fulfil their task by guessing at a scheme of dietary, and, that failing, recommend *that the labour be brought down to the dietary!*

As this will scarcely be credited without proof adduced, I cite their own words:—"We think it more reasonable, as well as more economical, to apportion the punishment to the diet, than to raise the diet to the level of the punishment. If, therefore, the labour on the crank or treadmill, whether through the amount of exertion or its duration, should in any case prove excessive, so that the prisoners are evidently suffering in health, we recommend that the labour be gradually reduced in duration and severity till the prisoner, with the usual diet, is able to

bear it." If the mountain will not come to Mahomet, Mahomet must go to the mountain.

(To be continued.)

ART RESULT SOCIETY.—PROPOSED MODE OF ACTION.

By C. BRUCE ALLEN, ARCHITECT.

It is at all times very difficult to impress on the thoughts and minds of others the like sense of the importance of any particular plan of action new to others, but long held in the mind of the original proposer. Sometimes, indeed, it is found to be a matter of no small difficulty and labour to induce even those interested to be at the slight pains of endeavouring to fully comprehend the meaning and full scope of the new proposition, so as to enable them to come to a fair judgment on the merits and demerits of it. Happily, in the proposal now submitted to the consideration of the Society of Arts, the whole work may fairly be said to be already more than half accomplished, and it remains only to try and point out how best and most effectively the rest may be worked out, so as to save all that painful expenditure of means and strength which must always follow from the partial comprehension and working out of an idea.

Those who have watched the progress of the fine arts of the time since the period of the Exhibition of 1851 must have noticed the very many efforts that have been made to add to the value, as works of art, of objects in daily use, furniture fabrics, and articles of art manufacture generally, and have, perhaps, wondered not a little at the fact, considering the efforts made, at not being able to find the evidences of so much painstaking in the common things about them, or indeed any signs whatever of a *change* in them. But the wonder will surely cease when it is remembered that all these efforts hitherto have been confined to the contriving different modes of *drawing on paper* and on a flat surface, and to novelty in designing, and that until the Society took up the cause of the workman, and asked for specimens of his skill and handiwork in the material of his trade, there was and could be nothing visible to the public to evidence a change. The recognition, during the last year, of the workman and his work, fairly started this, in modern times, entirely new movement in fine art, and was in reality the commencement—but still only the commencement—of an entirely new era in modern fine art efforts. It is difficult at present, and in its present crude state, to see the full drift, and in the future the lasting importance and strength of this movement; but none will doubt its future power who bear in mind the fact that all we ever see of art in common things and buildings comes direct from the hands of our common workmen. The artist may have shown him *how* to do the work, but the real and actual work is his.

Another fact, bearing directly on this, is that of the many and successive changes which have, from time to time, and within the same interval, been made in the various Art Schools, both public and private, in the method of teaching elementary drawing, and how best to bring the art of drawing to bear on practical work, nearly every conceivable plan would seem to have been tried but the right one, and there is but one; high art has been urged, and low art, and line drawings, and shadowed drawings, and perspective, and water-colour drawing, and even oil colour itself attempted, but all, nevertheless, have unfortunately and utterly failed to do that which they were supposed able to do, and by so many fondly hoped to accomplish, namely, to help the workman to produce, and afford to the public, through him, fine art work. If anything were needed to make plain and evident this fact, it would be found in the government report just issued on the Schools of Art and their mode of art action. None will say there has been lack of effort and trial

plans, for the system has varied year by year, and, indeed, it would seem, at first sight, not a little surprising and disappointing that more perceptible improvement in some one or other direction, or at least change, did not manifest itself. But there has been none. The Art Schools of the present hour are as void of practical and *material*, and even of artistic result, as were the Schools of Design when they were a year old, now more than a quarter of a century ago. The reason is plain enough, and it is this: that, according to a law of art and of nature, but a very few are, in each generation, gifted by nature with the art faculty in sufficient strength to make their work, as copyists on flat surfaces and as makers of representations of existing things, of any art-value at all; so that the attempt to manufacture artists, and to urge ordinary men to display this high and rare faculty has, as in the nature of things it must, ended in total failure. In every age, doubtless, a certain given number of minds are produced, capable, with cultivation, study, and practice, of accomplishing that great and rare art of painting pictures, drawing, and engraving; but such minds are very limited in number, and cannot be added to from the common bulk of humanity by any process, possible or conceivable, of art education. But to do this impossibility has been the object, unwittingly, of the Schools of Design and the present Art Schools, by the apparently easy and obvious process of taking and forcing the student, whether workman or draughtsman, through a series of art "grades," as they are termed, beginning with lines, and ascending through these grades successively to—when it was even in appearance possible—picture painting, or drawing. This has all failed. Neither picture-painters nor pictures can be thus produced, and the whole work, after all these years of trial, has to be begun again from a new starting point; and with it is to be hoped, a total forgetfulness and abandonment of all that has hitherto been done or tried. It is here that it is thought this plan of a Result Society in Art would help to indicate the true way; and its consideration will, it is hoped, assist in interesting the Society of Arts in its formation, for such a Society would always point to, and ask for, the great end of all art power, viz., the impress of it on material and in objects of common and every-day use, and it would then consequently be the object of all Art Schools, whether public schools or private schools, to give to their students the art means, and those *only* required by them in their daily work. This would not be picture painting or drawings on paper, but the power to draw on the material of each workman's own art trade, so as to enable him to add to his ordinary and necessary work some one or other artistic addition; in short, to make his work fine art work, as we see in the works of the past, and not merely ordinary labour and manufacture, or handicraft.

It must here, however, be noted and kept in mind that it would seem to be very doubtful how far the usual run of our ordinary workmen will be able of themselves to master the two-fold difficulty of drawing and art-workmanship. It is altogether beyond present practice, for our *workmen* cannot, as a class, *draw* at all. To teach the workman this necessary and primary art has yet to be begun, *i.e.*, the drawing useful to him in his trade—a working drawing—not this even for its own sake—but simply for the purpose of enabling him to *copy* such drawing on material, previous to and as a guide to its execution. It would seem the better plan to confine the workman to his material and his work, and leave the drawing to the regular draughtsman; and here again it is thought that this proposed Society would act with peculiar and effective energy, for it would never ask for drawing for its own sake, but it would demand such drawing only as a means of interpreting the art work it had before it. Pictures and pretty drawings and sketches would be out of place and uncalled-for, the whole and sole interest being in the design and its interpretation through the drawing—the one actually wrought from—to the art object itself.

These principles, thus hastily sketched, are well exemplified in the drawing accompanying No. 609 of the Society's *Journal*, viz., the inkstand, or watchholder, to be carved in wood, by Holbein, selected as the subject of a prize to the art workman. We may suppose this to be a geometrical sketch of the object in a shop, or art factory, by the draughtsman or artist in such establishment; and a very difficult subject indeed for an ordinary art workman it is, for an accomplished artist, of power and long experience, could not do more than justice to the three figures which help to support it,—indeed the arabesque ornament alone will try the skill of the best of our executive workmen. The proposed Art Result Society, while demanding the inkstand itself, and recognising the actual workman and wood-carver, would and must feel equal interest in the geometrical drawing or rather drawings required by the workman to execute the object from. No workman in this case—to cite it fully as illustrative—could well do with less than two elevations, a plan, and a plan of the top, and perhaps a section, and it would be such full-sized working drawings that the artist-draughtsman would be called on to supply, and for which he would be recognised and rewarded side by side with the workman. Everything should be clearly shown which the workman has to form or carve, and nothing left for guess-work—his power consisting in the ability to realize the drawing in wood, and his art power in drawing the various parts on the wood—and finally in carving them.

It is true that the present action of the Society of Arts is, it is thought, defective, for why should we go back to the days of Holbein, or to Holbein himself, for this design, good as it is; why should not some modern and living draughtsmen in some of our shops or art factories have been asked to contribute a design for an inkstand? What a pity it seems that all opportunities to help the artists of the present day should not be taken advantage of, and encouragement, and help, and hope held out to them. It would seem absolutely certain that there are numbers of artist draughtsmen thoroughly able to design and supply working drawings of an inkstand fully equal to this, and more adaptable perhaps to modern uses. It would be the duty of a future Society, such as is here urged, to reject those productions of past times and dead artists, and to encourage present times and living artists, quite as able if only recognised and encouraged. The proposed Society would invite in one year our artists in the shops and art factories to contribute in competition designs and working drawings of any art object which might be thought most suitable, and within the capacity of our present race of workmen, and such drawings would then, in the following year, be offered to the workmen in competition, to be worked from by them, and the combined results, the drawing and object, exhibited together as tests of the then state of designing and executive ability of both draughtsmen and workmen. Parts of objects only need be demanded, as the lower part of a pilaster pannel, such as that from the Castel R. Pandino, given in the same number of the *Journal*, so that but one drawing would be needed; such drawing, however, being a full-sized working drawing, and not a mere sketch. The more complete the subject, of course the better, as it would be more readily appreciated by artists and the public. Simplicity of subject at first, and easiness of execution, should be the guiding rules, till it be shown by the resultant work how much and what is now possible. Each year would doubtless add strength and facility, and it would very soon become evident that the art power of the past is not extinct, but only dormant for want of proper and honest exercise, and that the artistic strength of Donatello, Holbein, Fiamingo, Van Leyden, and others, whom the Society have now honoured by putting their good works before our modern workmen, are yet to be succeeded by modern and living men, if we but give them the same change, and encourage them to go to their work in the same way.

WEST LONDON SCHOOL OF ART.

The second annual distribution of medals and other prizes to successful students took place on the 20th July. The chair was taken by A. J. B. Beresford Hope, Esq., the President, who distributed the prizes. Among the gentlemen on the platform were the Earl of Powis, one of the patrons, Mr. Peter Graham, the treasurer, Mr. George Godwin, F.R.S., Mr. Hubert, Mr. Digby Wyatt, Mr. Joseph Clarke, F.S.A., Mr. Macdonald Clarke, the master of the school, and Mr. Lomax, the honorary secretary. The Chairman said they had met together for the second time to distribute the prizes gained by the students of what was the Marylebone School of Art, but which had grown into the West London School of Art, an important change. He thought there would soon be a more material connection between the school and the Architectural Museum. Last year the school had ten medals and two honourable mentions, while this year they had twenty-one medals and eight honourable mentions. In the national competition last year they had two medallions, the highest distinction conferred by the Department of Science and Art, and no honourable mention, while this year they had three medallions and one honourable mention. Nearly all the works they saw upon the walls that night had been done in the first occupation of those rooms; indeed, between November and March, a period of about three months. This was much to the credit of those who had done the work.

The distribution of prizes then took place.

Forty-nine students (including one lady) having obtained the mark "excellent" in the time drawing or second grade examination, gained prizes, which were severally delivered to them, the chairman expressing the pleasure he felt in doing so.

The next upon the list were the names of thirty-three students who obtained the mark "good" in the time drawing examination.

The following students obtained medals for their studies:—

Messrs. J. R. Bendall, F. Braun, J. T. Foot, J. Garner, M. M. Glover, C. S. Gordon, J. H. Grant, S. H. Ives, H. Montford, G. S. Murdock, J. Peters, W. Poole, F. Tebay, W. F. Wetten, and E. Wormleighton.

The entire number of medals taken by the above-named students was twenty-one. Seven students were honourably mentioned.

The following students obtained the national medal:—

Messrs. G. H. Ives, H. Montford, and G. S. Murdock.

Honourable mention was awarded in the national competition to Mr. W. F. Wetten.

A money prize, offered by Captain Jolliffe, M.P., for a sketch for a stained glass window, was awarded to Mr. T. Porter.

The following were entitled to prize studentship, having passed in four subjects and taken medals:—Mr. H. Montford and Mr. C. S. Gordon.

The following obtained prizes in the Society of Arts competition among art workmen:—H. Braun and F. Braun, who, the chairman said, were brothers, and marqueterie cutters.

Six students of the school had, during the past year, been admitted students of the Royal Academy.

In presenting the national medallion to Mr. Montford, the chairman said that his work marked him out as a man of high promise.

Last year's results were considered remarkable for a school in its second year; but a comparison with this year's afforded the most gratifying evidence of the increasing attainments of the students. A little over twice last year's number of persons worked successfully this year nearly three times last year's number of examination papers, obtaining more than double the number of "good"

marks, and more than four times the number of "excellent" marks obtained last year.

Earl Powis, Mr. Digby Wyatt, Mr. Peter Graham, and Mr. George Godwin addressed the meeting.

The vote of thanks was then passed unanimously to the chairman.

Fine Arts.

PUBLIC WORKS IN FRANCE.—The city of Paris has called upon certain selected artists to send in plans for the proposed decoration of the Church of the Holy Trinity, to which work the sum of 43,000 francs (£17,200) is to be devoted. The municipality of Nantes is about to erect a statue in honour of the late Minister of State, M. Billault, and a letter just published by a young sculptor, M. Aimé Millet, gives a curious instance of *Nantais* munificence. The authorities of the place have published the terms of competition for this work, which includes a statue of the late minister and four decorative figures for the pedestal, and offers the fortunate artist who may gain this grand prize the sum of 14,000 francs (£560) for the whole, including the superintendence of the casting in iron and the cleaning and repairing of the casts. It is politely suggested that the Maire of Nantes has omitted a final zero.

INDUSTRIAL ART IN FRANCE.—The Union Centrale des Beaux Art appliqués à l'Industrie, of Paris, which has already been mentioned in the *Journal of the Society of Arts*, has received the authorisation of the government, and its museum and library of works appertaining to the ornamental arts are to be formally opened on the 20th of September. The society's house is No. 13 in the fine old square called Place Royale, near the Place de la Bastille. At the same time the Society will commence courses of public lectures and conferences on all subjects relating to industrial art. Another society has just announced an exhibition, to be held in the Palais de l'Industrie, Champs Elysées, in September and October, also for the encouragement of ornamental manufacture.

CERAMIC EXHIBITION AT ROUEN.—An exhibition of French, and especially Rouenese *faïence*, was opened in the above town on the 15th instant. The authorities and lovers of art of Rouen are working steadily and perseveringly to establish a grand collection of the ceramic wares for which the town and neighbourhood were once so famous, and which now fetch such enormous prices. An exhibition of the kind referred to was held there in 1861, and the profit, about 10,000 francs, was applied towards the purchase of a very curious collection of old ware, made by M. André Potter, the librarian and conservator of the Museum of Antiquities of that town. This gentleman delivered an interesting address, on the occasion of the inauguration of the present exhibition, on the pottery in question, which has been printed at length in the *Journal de Rouen*.

AMSTERDAM EXHIBITION.—This exhibition opened, according to promise, on the 17th instant, and the attendance was large, and included many distinguished personages; Prince Frederick, the uncle of the King of Holland, is the president of the commission, and presided at the inauguration. The building is constructed on the plan of the Crystal Palace. We talk of new styles of architecture, and lament the incapacity of the present age for inventing anything to take rank with classic and Gothic, but Rome was not built in a day. Crystal Palace architecture is making its way; it falls very short at present of a complete and systematic style, but it has features which demand recognition and admiration; it is eminently original; it meets one of the acknowledged tenets of architecture—fitness for its purpose; it is not like the renaissance, a variation of a preceding style; it is following the course of Grecian art; it is as independent and as promising as were the first rude buildings from which

grew Doric, Ionic, and Corinthian; and if the sense of beauty and the capacity for a material rendering of that sense are not wanting in the people of the present age, the system which has furnished half the cities of Europe and America with economical and useful buildings may be the parent of a new style, for which the proper appellation will be that of the English, or that of the nineteenth century.

BAYONNE EXHIBITION.—The accounts of this undertaking, as regards the fine art portion at least, are not brilliant. The place devoted to the exhibition of the pictures and other works of art is spoken of as a shed, ill-arranged and ill-lighted. Altogether the arrangements seem to have given anything but satisfaction, and, besides besides being unworthy of the undertaking, they are sadly in arrear. This is a pity, as a good exhibition of French and Spanish art and industry might have been of essential service to the two countries, and would certainly have been interesting to the whole of Europe.

ROUEN EXHIBITION.—By an error the opening of this fine art exhibition has been spoken of as to take place in 1865; it really opens on the 1st of October next, and from the applications for space there is every reason to believe that the old capital of Normandy will have a large and brilliant collection of paintings and other works of art.

FEMALE ART IN FRANCE.—It is well known that a very large number of females find occupation in connection with the fine and industrial arts in France, and many have attained to high if not to the very first rank. Madame Lebrun is an instance in the last generation, and Rosa Bonheur a very notable one at the present moment. The prize lists of the Paris exhibitions always contain some names of lady artists, and the last exhibition afforded more than the average number of instances. Lastly, those who have visited the Louvre on a student's day cannot fail to have noticed the presence of very many female artists and students copying or studying from the works of the great masters. Lady artists in France, as elsewhere, naturally give the greater part of their attention to those branches of the art which require delicacy of touch rather than deep study and hard labour, such as miniature and fan painting, porcelain decoration, water colour and pastel drawings, but there are many remarkable exceptions, and more than one lady could be mentioned who holds in France at the present moment a high position, if not in historical, at least in *genre*, animal, flower, and portrait painting, and also in sculpture. But the employment of a female artist in the decoration of a church is an uncommon, if not a unique occurrence, and the employment by the Prefect of the Seine of Mademoiselle Nelly Jacquemart on a work in the Church of Suresne, near Paris, has caused a slight sensation in Parisian art circles. The young lady belongs to a family which has more than one artist besides herself amongst its members.

Commerce.

COTTON IN CHINA.—The accounts of the prospects of the cotton crops in the Celestial Empire are encouraging. The exports from the 2nd to the 27th of May are as follows:—From Shanghai for Liverpool, the *Unrivalled* with 6,960 bales, the *Helvellyn* with 8,680 bales, the *Elizabeth Nicholson* with 7,090 bales, the *Australia* with 4,990 bales, the *Fanny* with 3,750 bales, the *Cyclone* with 5,160 bales, the *D. Jex* with 1,870 bales; and for London, the *Neville* with 5,950 bales. From Hongkong there sailed for Liverpool, the *Glenlee* with 7,152 bales, and for London, the *Chandernagore* with 44 bales. The Dutch ship *Twice Councillesee* is reported to have sailed from Yokohama for London with 2,449 bales, making the export for the month 51,819 bales, and for the season (from June 1, 1863) 608,629 bales.

IMPORTS OF WOOL.—The imports of sheep's wool into England in April was on a scale of great magnitude, having amounted to over 17 million pounds against 14,285,000 lbs. in the corresponding month last year. The deliveries from Australia in April were enormous, having reached a total of 13,163,000 lbs. against 7,206,000 lbs. in April 1863. The total imports, which in the first three months this year exhibited a decrease as compared with 1863, now present some indications of progress. The quantity of alpaca and llama wool received in the first four months of 1864 shows a slight decrease as compared with 1863, but there is a decided advance in the imports of woollen rags torn up to be used as wool. On the other hand the great progress in the exports of woollen goods, and the general activity in the home demand for this branch of manufacture are very striking; and there seems little probability at present of increased imports of raw materials having any influence on prevailing prices.

GAS ENGINE.—In the Exhibition of 1862, in the French department, was shown at work a small engine of this character, made by Lenoir, of Paris. Ordinary gas from the street mains is admitted, mixed with a certain amount of common air, into a cylinder with a piston working in it like a steam engine, and then exploded at each end by means of a spark from a voltaic battery, thus giving a backward and forward motion to the piston. The arrangement is said to be specially adapted for engines not exceeding 3-horse power. The amount of gas consumed per horse power per hour is 50 cubic feet, and this is mixed with common air in the proportion of one part gas to nine of air. The engine, when once set in motion, requires no further attendance, and no boiler or furnace is needed. Mr. Wiley, pen and pencil case maker, of Frederick-street, Birmingham, has just purchased one of these engines in Paris, where they are getting into extensive use, and it is the first brought into this country. Any person interested in the engine, it is understood may see it in operation by applying at the works of Mr. Wiley.

Colonies.

THE SETTLEMENT IN NORTH AUSTRALIA.—Three vessels have been dispatched, the *Henry Ellis* and the *Yatala* by the South Australian Government, and the surveying ship *Beatrice*, under the command of Captain Hutchinson, R.N., which is to co-operate especially in the matter of coast survey. The vessels are to rendezvous at Adam Bay, which is near the western entrance of Van Diemen's Gulf, the idea being that the most suitable site for a settlement will be found somewhere near or within the mouth of the Adelaide River. This locality is to be explored in the first instance, and if no suitable site can be found the coast is then to be examined to the southward. If this be determined on, the stock and stores are to be landed, and a dépôt to be established pending the progress of further examination, so that at any rate there will be a temporary settlement in this locality, and those who are left in charge of it will have some experience of the climate. The coast line to the southward is known to be indented, but beyond that fact our knowledge is limited. There may be some fine bays, but if, after examining as far south as Victoria River, the right place cannot be discovered, the expedition is to return northward and examine the coast of Van Diemen's Gulf, and, failing any success there, is to prospect the coast as far as the Gulf of Carpentaria, avoiding Port Essington and Raffles Bay, but looking closely at the west coast of the gulf as far as the river Roper in Limmen's Bight.

SALMON.—The *Launceston Examiner* of the 23rd of June says: "A communication received a few days ago from Melbourne states that there were at least 3,000 young salmon swimming in the hatching pond, and it is satis-

factory to know that every precaution has been taken to ensure the safety of the fry. But, though highly satisfactory so far, the enterprise cannot be said to have completely succeeded until we have our own breeding salmon, which will be from two to three years hence. To suspend operations for that time would be folly. Now that the packing of ova is ascertained, and the exact cost of its transport can now be calculated, it is very desirable that further shipments should be obtained for the next two years. By this means there would be a succession of fry coming on each year, until those first hatched are spawners. The ponds are already prepared, and the services of a skilled superintendent must be retained for a long time to come, so that the only expense will be that actually attending transportation, and probably it would not exceed £400. It is to be hoped that the young fish now in our ponds will arrive at maturity, but an unforeseen casualty may carry them all off, and compel us to begin the enterprise afresh, with all the delay and disappointment that would follow. If the plan now suggested it will be a safe precaution, and will very materially hasten the stocking our rivers with salmon. We trust such a proposal will be submitted to Parliament, so that there will be ample time for obtaining a supply of ova at the approaching season.

TELEGRAPH.—The telegraphic extension from Denilquin to Hay (New South Wales), a length of eighty miles, was opened for messages on the 9th of June, having previously been inspected by the superintendent of telegraphs. Progress is being made with the extension from Wellington to Dubbo, and also with that from Braidwood to Queenbeyan; the latter line will soon be finished. The tender of Mr. D. Macquarie has been accepted for the extensions from Mudgee to Murrurundi, at a cost of £87 per mile.

RAILWAYS.—The *Sydney Herald*, 21st June, says: "The very severe and disastrous floods with which the colony has been visited during the past month have seriously interrupted the carrying out of the railway contracts; and we have consequently little to report respecting the progress that has been made with the new extensions. The continued rains not only put a stop to the works, but their effect on the roads must be for a time to render almost impossible the carting of materials to the lines. The contractors for the bridges at Penrith and at Singleton have suffered losses from injury to their plant; but otherwise, upon the lines in course of formation very little damage has been done to the works. The embankments have, of course, sunk considerably, but this had been provided for by their being kept above the required level. Considerable damage has, however, been done to each of the existing lines."

BRITISH AMERICAN TERRITORY.—The *Toronto Leader* says:—In point of territory British America under one Government would make one of the most extensive countries in the world. It is impossible to state the area with absolute accuracy, because many parts have been only imperfectly surveyed or explored; but it may, at all events, be taken that Newfoundland comprises 40,200 square miles (many persons believe the number to be much greater); Prince Edward Island is 2,173 square miles; New Brunswick, 27,105; Nova Scotia, 18,600; Canada (according to Sir W. Logan), 330,000; Hudson's Bay territory, 2,300,000, British Columbia, 200,000, Vancouver Island, 15,000, making together 2,933,078 square miles—a larger area than that of the United States (if there be such a country now), and approaching the size of Europe. The boundaries of British North America may be taken to exceed 11,500 miles. But if for the present the proposed confederacy stop short at the Red River, it would embrace a territory more extensive than those of France, Italy, Portugal, and Greece added together, and equal to Germany and Spain united.

Publications Issued.

CE QUE PEUT RACONTER UNE GRILLE DE FER DE L'INFLUENCE DES FEMMES SUR L'ARCHITECTURE, ETC.—(What an Iron Gate can tell of the Influence of Woman on the Architecture of the Eighteenth Century.) By César Daly. Paris.—This is a *brochure* by one of M. Vitet's slighted esthetics; in fact it purports to be a first instalment of Conversations on History and Esthetics. The title is quaint, but apt, although it may require a little explanation. M. Daly takes one of the beautiful gates of the railings that enclose the choir of Saint-Germain-l'Auxerrois, the church which faces the eastern *façade* of the Louvre, and analyses it, as it were, in order to show what a strange influence the effeminate manners and coquetry of the time of the later Louis had upon art, even religious art—how fashion pervaded the very sanctuary itself, and how such an able artist and workman as Dumiez, who designed and executed the whole of the beautiful work in question, in 1767, could so far depart from the rules of art, and so utterly disregard the fitness of things, as to ornament a screen in a Gothic edifice with all kinds of flowing scrolls, rosettes, bows, and true-lovers-knots, and, amongst other enormities of the same kind, to curve the tall and spear-like stalks of the lily with pretty flowing forms in accordance with the fancies and habits of an age which had no more regard for nature and true art than for anything else that did not belong to the realm of courtly taste. Upon this text M. Daly has written a very ingenious and esthetical discourse in a small compass.

TRAITE DE LA FONTE ET DU FER.—(Treatise on Cast and Wrought Iron.) By M. Landrin. Paris.—The author of this work is a mining engineer, and he details the various processes employed in the manufacture of iron with considerable minuteness, the text being assisted by cuts interspersed in the letter-press and steel-plates. The volume is prefaced by a long and remarkable introduction, entitled the history of iron, and which is not unworthy of the subject.

SOUVENIRS DE VOYAGE ET CAUSERIES D'UN COLLECTIONNEUR.—(Notes of Travels and Conversations of a Collector.) By M. Demmin. Paris.—This is a curious little book, and will be acceptable to *connoisseurs* visiting Germany. M. Demmin is an enthusiastic admirer of German Art, which he does not hesitate to place higher than that of Italy, especially as regards the earlier periods of the schools; he is also an industrious collector, and well acquainted with the bye-roads and labyrinths of the kingdom of Virtù. His book introduces the traveller to collections but little known to the public at large, and supplies curious information respecting dealers in works of Art and curiosities.

Notes.

COLLEGE OF PRECEPTORS.—At the last half-yearly meeting of this corporation, the dean stated that the recent examinations had been conducted with the utmost possible regularity and impartiality. The numbers who came up for the pupils' examination, both in London and in country schools, had greatly increased. Besides the regular examinations by written papers, the college had been called upon to test a larger number of schools by oral examination. At the examinations for diplomas, seven ladies and nine gentlemen presented themselves for examination in various subjects. The report of the Council remarked upon the steady progress which the college had made during the last six months in all departments. The number of candidates at the recent examination had been larger by upwards of 100 than at any previous examination, and 220 more presented themselves than at the corresponding examination last year. The Council sug-

gested that private schools should not manifest unwillingness to submit to inquiry, should a Royal Commission on middle class schools be appointed. The Council reported that progress had been made since the last general meeting in the formation of the general committee, which is intended to represent the various associations of those who are more immediately interested in the scholastic registration question, as well as to comprise individuals well-known for their enlightened interest in education, and for their influence with the public on all questions connected with it. Enough has been done to ascertain that no effective opposition need be apprehended from the profession to such a measure as that sketched in the circulars issued by the Council. What is now required is the active support of those who are favourable to that plan, in order to overcome the *vis inertiae* of government and parliament. During the last six months the diploma of Licentiate has been granted to four persons, and that of Associate to the same number.

PRESERVATION OF MEAT.—Monsieur Pagliari, whose process for preserving meat by means of a coating composed of a liquid formed of alum-water and benzoin, described in Dr. Calvert's last lecture,* has just presented to the Academy of Sciences at Paris a modification of the process, which is stated to be very successful. He impregnates paper with this liquid, and makes it into bags, in which he places the meat. The Abbé Moigno states that he has had fresh-caught fish, thus packed, sent from the coast to Paris, which, notwithstanding the great heat, has arrived in excellent condition. The Abbé also enclosed some fresh meat in one of these bags, which has hung up in his study for eight days during the present hot weather, and this, when opened, was perfectly good and fresh. The liquid communicated no unpleasant taste to the meat.

Monsieur Runge gives the following process for the preservation of meat:—He takes an earthenware vessel, of convenient size, with a well-fitting cover, and at the bottom he pours 20 to 30 grammes of strong concentrated acetic acid, and places over it, at a distance of about five centimetres, a small grating made of wood, on which the meat is laid, and the lid is put on. The result of this arrangement is that the meat is surrounded by an atmosphere of acetic acid vapour, and is preserved from putrefaction for 12 or 14 days.

ANILINE COLOURS.—The Industrial Society of Mulhouse have determined to award the Dollfus prize (a gold medal and six thousand francs) to Messrs. Perkins, Hofmann, Verguin, and Béchamp.

DESTRUCTION OF TUMOURS BY GALVANIC ACTION.—M. Nélaton, whose reputation as a surgeon is European, has recently made a discovery, or rather applied a natural force, to the cure of one of the most painful forms of disease that afflict human nature, and he has just communicated the fact to the Academy of Sciences of Paris. The object is the destruction of tumours by means of the electric current. Polypi and other tumours formed in the natural cavities of the head and of other parts of the body are not only most painful, but their extirpation is attended with the greatest danger, especially when seated in the head. M. Nélaton has given a large amount of attention to this subject, and having arrived at the conclusion that all the means in general use were exceedingly unsatisfactory, resolved to try the effect of electricity. It has been long known that when two needles connected with the poles of a battery are placed in contact with the skin of the human body a slight destruction of the tissue occurs, but little importance was attached to the fact. M. Nélaton, however, conceived the idea of attempting to destroy tumours by inserting the needles in the parasitic mass, and placing them in communication with a powerful voltaic pile. In the first place he experimented on a dog, and he found that when two platinum points connected with a Bunsen battery of nine elements were

* See *Journal*, page 652.

inserted in the flesh there arose, after the current had been in action for eight or ten minutes, an induration of some extent around the positive needle and a corresponding softening of the parts round the other, with the formation of a white froth, composed of extremely minute bubbles of gas. After some other preliminary experiments, Dr. Nélaton had an opportunity of testing his new mode of operation, to which he gives the name of *electro-puncture*, in the case of polypus in the human subject. A young man, a tutor, nineteen years of age, entered into the family of M. Nélaton; he was suffering from a large vascular tumour in the roof of the mouth, which caused him great pain and inconvenience. All the ordinary modes of treatment had been tried without success, when Dr. Nélaton decided on making an experiment with the electric current. Two needles were introduced into the tumour, the pain was slight, and the white frothiness soon made its appearance. The action was continued for ten minutes. The treatment was repeated at intervals of eight and ten days, and maintained, after the first occasion, for only three to five minutes; the polypus began to diminish from the first application, and the patient was cured in four months, without loss of blood, and having suffered little pain. Dr. Nélaton has achieved few more important successes.

CLUB HOUSE FOR ARTIZANS.—At Birmingham, on the 25th instant, an artisans' club house, which has been built upon the co-operative principle, chiefly by the men employed at the foundries and engine shops about Birmingham Heath and Smethwick, was opened in that locality. The club begins with a weekly subscription of 3d., and a quarterly one of 2s. 6d. Quarterly members alone will have the right of voting, and one bagetelle table will be observed exclusively for their use. The club will be open, to members only, every day (Sundays excepted) from eight o'clock in the morning until ten o'clock in the evening; and to its members the following advantages are offered:—Spacious, well-ventilated and lighted rooms, for smoking, reading, bagatelle, chess, draughts, dominoes, &c., &c., refreshments, of the first quality, at very reasonable prices; a reading-room, supplied with London and local papers, magazines, &c.; a library of standard and interesting works of fiction, history, biography, &c.; a lavatory, fitted up with every convenience; free attendance at lectures, reading, and classes, which will be organised at intervals during the year. There is also attached to the premises a gymnasium, with swings, jumping bar, climbing poles, &c.; an excellent quoit ground and skittle alley, in connection with which it is intended to establish clubs; and a capital rifle gallery. There will be classes for the study of advanced arithmetic, practical mechanics, and general and mechanical drawing, with English literature and composition. The committee are anxious to commence a glee and madrigal class.

GRANT'S PORTABLE RAILWAY.—Mr. Hubble, steward to Mr. Bannerman, of Barn Hill, Hunton, Kent, writes as follows:—"It may interest many of your readers to know that this railway was yesterday employed on the estate of H. Bannerman, Esq., in this parish, in carrying wheat to the stack, being, it is believed, the first work of the kind ever attempted by rail. A good crop was cleared off a six-acre field in the course of the day, and stacked in the field in a decidedly expeditious and creditable manner; the frequent shifting of the branch line and turntable being effected with remarkable ease and dispatch by one man. The tackle employed consisted of 60 rods of rails, two trucks with ladders, and two turn-tables. Although corn-carrying is not the kind of work for which the railway would be most useful in this district, where so little is grown, yet I feel it to be due to Mr. Grant, who has bestowed a very great amount of thought upon the subject, to state my conviction that the adaptability of the railway for carrying corn, as well as roots and manure, must be a most important consideration in the great corn and root-growing districts of the kingdom, especially on large holdings, where steam is used in the cultivation of

the soil, and the horse-power of the farm is reduced to a minimum. Although the field in question inclined upwards to the stack, one horse only was employed to draw the two trucks coupled together. But it would very frequently happen in level districts that horses might be entirely dispensed with. As I have said, however, these considerations rather concern our corn-growing readers than the hop-growers of this neighbourhood, who are chiefly attracted to the rails by the power which their great bearing surface affords, of getting out manure, hop-poles, &c., at any season, without having to wait for a frost and of avoiding that injurious kneading of the soil which carting off the root crops so often inflicts."

Correspondence.

NORTH LONDON WORKING MEN'S INDUSTRIAL EXHIBITION.—SIR,—The promotion of Exhibitions of Art, Science, and Manufactures is emphatically our province, for to the Society of Arts the civilised world is indebted for the establishment on a gigantic scale of the only series worthy of the name. To the example afforded by, and the experience gathered at, the Great International Exhibition of 1851, we are indebted for those of Paris in 1855 and at South Kensington in 1862, and of minor ones at New York, Dublin, Cork, and elsewhere. At none, however, of these, were skilled workmen specially invited to contribute the results of their talent and labour, for reasons sufficiently obvious, and prominently because they could not afford to expend the time and money such efforts would necessarily involve. But the time would now seem to have arrived when efforts in that direction exclusively are called for, and at all events exhibitions of native industry are being inaugurated by workmen themselves. Already one such exhibition has been successfully held at Lambeth, and another on a still more extensive scale is in process of establishment for the larger district comprised in the term "North London," and which it is intended to open on the 17th of October next, at the Agricultural Hall, Islington. For the promotion of this object large meetings of the producers and their friends have been held in suitable localities, the proceedings at one of which, in Amwell-street, Pentonville, where I had the pleasure of presiding, was reported in the last number of our *Journal*. I must candidly confess that until then (for I was unable to see for myself the contents of the Lambeth exhibition), the possibility of exhibitions limited to national and even local skilled workmanship was rather no than yes with me. What I heard and saw on that occasion; the intercourse I have since had with persons directly interested in the movement; and what I have read on the subject, have removed any doubts I may have previously entertained. You will see by the enclosed programme that these workmen have gone about their great project in a workmanlike way.* They have sought and obtained the patronage of well-known influential gentlemen, principally residents in the North London district, and have established a central committee of persons well known in most of the departments of scientific and art workmanship. The precise objects of the proposed exhibition are succinctly set forth, and rules and regulations for the guidance of intending exhibitors are drawn up with a true mixture of care and common sense, which cannot be misunderstood or fail to ensure success if rigidly enforced. The response has been most gratifying. One of the hon. secretaries, Mr. Ratley, informs me by letter, that "this experiment, for it is nothing more, is attracting public notice in a very extraordinary way;" and then proceeds to furnish some illustrative instances, unnecessary to quote, but fully bearing out the statement. The principal difficulty is how

* An abstract of this programme appeared in the *Society's Journal* a few weeks since, p. 592.

to meet the applications for information and space in the short time before the exhibition opens, especially considering that both the central and local committees are mostly composed of persons whose time is money and food to themselves and their families. "Every day," says Mr. Ratley, "brings us claimants for space of something curious or artistic." But besides this difficulty there is that preliminary one of the ways and means. Towards the solution of this, the promoters have wisely adopted the example of the Council of our Society in 1862, and invited guarantees principally amongst themselves for small sums, but not objecting to external help in the same way. The probability of such guarantors being ultimately called upon is very remote; nevertheless, it is a precaution which as men of business it was their duty to take. There is also another mode in which the friends of skilled workmen may more directly assist, but which I have some hesitation in suggesting. A letter was sent to me yesterday, from a not very well-to-do working man, anxious to exhibit what he describes as "a very useful article for poor people, viz., a portable oven, which could be sold very cheap; it is to bake on the top of a stove over a common fire." He is however unable himself to get it cast, as he has "but little employment, and it would cost about 30s." This case explains what I mean, and serves to show that if a fund were raised for the purpose of assisting in this and similar cases, the proper application would require great care and discrimination. In most cases of real industrious talent, the employers of labour are ready to assist, but there is the danger of weakening that sense of self-dependence which is so essential to self-respect. It cannot be doubted, however, that cases do exist in which no such danger need be apprehended; whether my correspondent, the inventor of an economic oven, is one of them, or whether there are other ingenious and honest men similarly situated, I am not in a condition to affirm—I merely throw out the hint. I have only further to say at present that this experiment is, as Mr. Ratley says, exciting great interest, not only in the district of North London, but in other industrial metropolitan localities, and even in large manufacturing towns, such as Birmingham, and others of corresponding importance. If it is as successful as we must all wish it to be, there cannot be a doubt that it will be largely imitated, and probably lead, at no distant period, to a National Industrial Exhibition, which will supplement and be scarcely less attractive than those great International Exhibitions, to the eminent success of the first of which—that of 1851—our late lamented Prince Consort so influentially contributed.—I am, &c., THOMAS WINKWORTH.

Canbury, Aug. 31, 1864.

Patents.

From Commissioners of Patents Journal, August 26th.

GRANTS OF PROVISIONAL PROTECTION.

Anchors, construction of—1916—G. F. Druce.
Animal substances, preservation of—1570—A. Hett and F. W. Bassett.
Atmospheric pressure, raising, lowering, &c., &c.—1281—J. E. Holmes.
Ball valves—1972—J. Lessware.
Bracelets, chains, &c., manufacture of—2021—J. B. Buffoni.
Cartridges, holder for—2011—A. H. Williams.
Coating surfaces, composition for—1496—T. J. Hughes and W. H. Hotten.
Colouring matters, manufacture of—1994—C. Lowe.
Cotton fabrics, making non-inflammable—1937—B. O'Connor.
Cotton, silk, &c., rendering non-inflammable—1957—E. Hottin.
Curtain hooks, &c., manufacture of—1889—J. Nicklin.
Cylinders, pipes, &c., manufacture of—1854—M. Henry.
Doors and gates, self-closing—1915—T. Newby and C. Smith.
Eggs, apparatus for cooking—1970—J. H. Johnson.
Elastic recipients—1982—W. Clark.
Electro-gilding—2029—S. Moore.
Fibrous substances, preparing, spinning, &c.—1890—W. Anderton.
Glass surfaces, gilding of—1889—J. H. Johnson.
Hats, caps, bonnets, &c.—1886—H. Freytag.
Hats, fittings for suspending—1900—W. Payton and J. Stanley.

Hats, stiffening or proofing—1922—W. Barber.
Inflammable air, apparatus for generating—1950—G. F. Marchisio.
Iron ships, preventing the bottoms from fouling—1962—C. Bartley.
Liquids, measuring the passage of—1977—W. Richards.
Looms—1976—D. Speirs, A. Boyd, J. Aitken, and M. Gilmour.
Looms—1980—J. L. Norton and W. Ainsworth.
Masts and spars, tubular—1884—T. Moore.
Mill straps, &c., preparation of leather for—1952—J. Lee.
Motive power—2025—A. C. Pilliner and J. C. Hill.
Motive power, lever machines for obtaining—1992—R. A. Brooman.
Musical box and albums, &c., combined—1919—F. W. Bossert.
Paper, &c., preparation of fibres for the production of—2003—J. Adam, J. Webb, and J. J. Monteiro.
Projectiles—1960—C. W. Lancaster.
Railway carriages and breaks—1953—I. Farrell.
Railway carriages, passenger safety signal for—1990—R. Pepper and A. Barr.
Railway rails, fastenings for—1938—M. A. Soul.
Railway sleeper—2027—R. Corder.
Railways, permanent way of—1882—J. Livesey and J. Edwards.
Railway trains, communication between one part and another—2045—T. Turner.
Railway trains, communication between passengers and guards—1924—M. Woodfield.
Railway trains, communication between passengers and guards—1974—T. F. Cashin.
Railway trains, communication between passengers and guards—1979—A. Turner.
Railway trains, communication between passengers and guards—2023—J. Dilkes and E. Turner.
Railway trains, communication between passengers and guards—2035—T. Morgan.
Screw bolts, manufacture of nuts for—1948—F. J. Bramwell.
Seeds, apparatus for cleaning—1984—W. Mason.
Smoke, consumption of—1964—W. Brookes.
Steam boilers or generators—1986—G. Davies.
Steam engines, automatical regulator for—1968—M. Runkel.
Stick lac, treatment of, for the manufacture of shell lac, &c.—2033—E. A. Pontifex.
Stoves, gas heating or cooking—1602—C. Denis.
Telegraphic apparatus (domestic)—1405—W. H. Preece.
Tin andterne plates, manufacture of—1956—G. Leyshon.
Traction engine, construction of—1978—M. Payne.
Weaving, preparation of warps for—1988—H. Armistead.
Weaving, reeds and halds used in—1848—J. C. Ramsden.
Woollen fabrics (army cloths)—1958—W. Stott.

INVENTIONS WITH COMPLETE SPECIFICATIONS FILED.

Fire-arms, &c., breech-loading—2059—B. Burton.
Military outfit, protection of—2051—L. Yvose-Laurent.
Oleaginous seeds, extracting oil, &c., from—2076—G. G. Boggio.

PATENT SEALED.

261. J. Whitworth.

From Commissioners of Patents Journal, August 30th.

PATENTS SEALED.

506. C. G. Hill.	569. J. Price and R. E. Donovan.
507. W. H. Mellor.	570. C. E. Laderich.
514. E. Humphrys.	572. W. Moir and C. E. Sergeant.
515. E. T. Hughes.	614. F. Wilkinson and W. Rossetter.
516. J. Wild.	
522. G. Davies.	623. J. Taylor.
528. F. P. Langenard.	627. R. H. Collyer.
532. J. Wright.	641. J. Newey.
537. B. P. Stockman and J. S. Scott.	686. W. Clark.
539. S. Pritchett.	687. W. Clark.
540. G. T. Bousfield.	796. R. Ferguson and W. Latimer.
541. G. P. Harding.	
542. W. Ibotson.	801. J. G. Beckton.
544. D. Slater.	1128. J. Thompson.
551. S. Bourne.	1178. A. V. Newton.
553. F. Smith.	1219. R. H. Hughes.
557. L. Hill.	1232. J. Womersley.
559. W. G. Beattie.	1376. W. E. Newton.
562. C. Humphrey.	1486. R. Whiteside.
563. T. Gray.	1534. J. Holmes.
565. C. Jordan.	1664. G. Haseltine.
566. J. Revell.	1623. H. A. Bonneville.
	1676. W. E. Gedge.

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

2108. S. Elson.	2185. W. Clark.
2281. J. B. Howell.	2133. L. M. F. Patureau.
2116. W. Clissold.	2141. J. Ronald.
2179. J. M. Dunlop.	2143. W. S. Guinness.
2123. G. Nye.	2162. J. S. Matthews.
2900. G. Farry.	2171. P. Taylor.

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

2250. J. Penn.	2285. H. Brinsmead.
2251. J. J. Tucker & G. Blaxland.	